REMARKS

The Applicant thanks the Examiner for the thorough consideration given the present application. Claims 1-19 are currently being prosecuted. Claims 1, 2, 4, 5, 8, and 10-16 are amended, and claims 18 and 19 are added. Claims 1 and 8 are independent. The Examiner is respectfully requested to reconsider his rejections in view of the amendments and remarks set forth herein.

Reasons for Entry of Amendments

At the outset, it is respectfully requested that this Amendment be entered into the official file in view of the fact that the amendments to the claims automatically place the application in condition for allowance.

In the alternative, if the Examiner does not agree that this application is in condition for allowance, it is respectfully requested that this Amendment be entered for the purpose of appeal. This Amendment was not presented at an earlier date in view of the fact that the last Office Action, which was a final rejection, set forth new grounds of rejection.

Drawings

Included with the accompanying Letter to the Official Draftsperson is a proposed change to FIG. 11 merely to identify circular hole 310 of the second control board 136. The circular hole is fully disclosed on page 16 of the specification as originally filed and, as noted below, the specification is amended herein to assign reference numeral 310 to this hole.

Specification

The specification is amended merely to correctly identify first control board 135 in the first embodiment, first control board 302 in the alternative embodiment, and second control board 136. The specification is further amended to assign reference numeral 310 to the circular hole of the second control board 136, as illustrated in FIG. 11, which shows an alternative embodiment of the present invention. No new matter is introduced.

Rejections under 35 U.S.C. §102(e) and §103(a)

Claims 1, 3, 5-13, 14, and 17 stand rejected under 35 U.S.C. §102(e) as being anticipated by Wakeo et al. (WO 99/16654). Claim 2 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Wakao et al. in view of Harms (U.S. 4,668,898). Claims 4, 15, and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wakao et al. in view of Okada (U.S. 5,444,314). These rejections are respectfully traversed.

As set forth in instantly amended independent claims 1 and 8, the present invention is directed to a motor-assisted drive unit having a combination of elements, including a first control board 135 having a first region overlapped with the motor 21, and a second region not overlapped with the motor 21.

Full support for the limitation set forth in claims 1 and 8 can be found, e.g., in FIGS. 1 and 3, which show first control board 135 having a first region overlapped with the motor 21, and a second region not overlapped with the motor 21. Further, FIGS. 11 and 12 clearly

show first control board 302 having a first region overlapped with the motor 21, and a second region not overlapped with the motor 21.

By contrast, a careful study of Wakao et al., Figs. 13 and 14 in particular, indicates that Wakao et al. merely disclose a control board 140A which fails to have a region not overlapped with the motor 10. Thus Wakao et al. are unable to achieve the advantages of the present invention, wherein for instance, as shown in Fig. 11, the capacitor 29 is able to be directly mounted above FET 27 and diode 28, the upper surfaces of FET 27 and diode 28 being in direct contact with the second region of first control board 302 not overlapped with the motor.

Clearly, Wakao et al. do not teach the configuration of the present invention. Further, Harms et al. and Okada fail to make up for the deficiencies of Wakao et al.

In summary, it is respectfully submitted that none of the prior art references cited by the Examiner teaches or suggests the novel combination of elements set forth in the claims of the present application.

Therefore, claims 1 and 8 should be in condition for allowance. Regarding the dependent claims, which stand rejected under either 35 U.S.C. §102(e) and §103(a), these claims should also be allowable due to their dependence on allowable independent claims 1 and 8, respectively, as well as for the additional novel limitations contained therein. Accordingly, all claims of the present application should be deemed allowable.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

Pursuant to 37 C.F.R. §§1.17 and 1.136(a), Applicant respectfully petitions for a one-month extension of time in which to file this reply. Attached is a check for the required fee of $110.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
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MARKED-UP COPY OF AMENDMENTS

IN THE SPECIFICATION:

Please **amend the paragraph beginning on page 15, line 12**, as follows:

Referring particularly to Fig. 3, a control unit for controlling the operation of the drive motor 21 is housed in the second housing 99 on the left (in Fig. 3), rear side from the drive shaft 21. The control unit has a [first] second control board 136 mounted on the inner wall of the first casing half 95 by means of mounting members 151a, 151b, and 151c, and a [second] first control board 135 mounted on the first casing half 95 with a gap between the [first] second control board 136 and the [second] first control board 135. The [second] first control board 135 is overlapped with a portion of the [first] second control board 136. The gap between the first and second control boards 135 and 136 [and 135] is established by collars 142 and 143 in which bolts are inserted.

Please **amend the paragraph beginning on page 15, line 21**, and **ending on page 16, line 5**, as follows:

The [first] second control board 136, which is preferably configured as a printed wiring board, has an area extending from the inner peripheral wall of the first casing half 95 to the periphery of the first bearing portion 107. In other words, the [first] second control board 136 has an area extending to a position at which it is overlapped with the motor 21, as seen from the axial direction A of the drive motor 21. Control devices such as a CPU 20, a

capacitor 29, and relay 30 are mounted on the [first] second control board 136. In order to effectively use a space on the [first] second control board 136, the CPU having a low height and a large area is disposed in the gap between a portion, overlapped with the drive motor 21, of the [first] second control board 136 and the drive motor 21.

Please **amend the paragraph beginning on page 16, line 6**, as follows:

The [second] first control board 135, which may be configured as a light metal board having a good thermal conductivity, such as aluminum, is directly attached on the inner wall surface of the first casing half 95. Devices such as a FET 27 and a diode 28 are mounted on the [second] first control board 135 while being put between the [first] second control board 136 and the [second] first control board 135. The heat generated from these devices are transferred to the first casing half 95 via the [second] first control board 135. Accordingly, it is possible to effectively prevent the above devices from being heated to high temperatures.

Please **amend the paragraph beginning on page 16, line 18**, and **ending on page 17, line 1**, as follows:

A [first] second control board 136, such as a printed wiring board, is disposed on a plane behind the motor 21 and perpendicular to the motor shaft as seen along the direction A of Fig. 11, so as to be near the motor 21. The [first] second control board 136 has a circular hole 310 centered at the motor shaft, and a motor shaft supporting portion 300 as a case boss portion having a circular cross-section [is] inserted in the circular hole 310. An annular

vibration-proof rubber ring 301 is mounted between the inner periphery of the circular hole and the outer periphery of the motor shaft supporting portion 300 in a state being elastically compressed therebetween.

Please **amend the paragraph beginning on page 17, line 2**, as follows:

As in the exemplary embodiments in Figs. 1 and 3, the capacitor 29, relay 30, and the like are mounted on the surface of a portion, not overlapped with the motor 21, of the [first] second control board 136, and a part having a low height and a relatively large area, such as the CPU 20 (not shown), is mounted on the surface of a portion, overlapped with the motor 21, of the [first] second control board 136. A [second] first control board 302, which may be a light metal board having good thermal conductivity, for example, an aluminum board, is supported on the back surface of a portion of the [first] second control board 136 so as to be overlapped thereto.

Please **amend the paragraph beginning on page 17, line 10**, as follows:

A central portion of the [second] first control board 302 is mounted to the inner wall surface of the first casing half 95 (see Fig. 1) with a screw 303. An insertion hole 304 in which a tool for turning the screw 303 is to be inserted is formed in the first control board 136 at a position facing to the screw 303.

Please **amend the paragraph beginning on page 17, line 14**, as follows:

The devices such as the FET 27 and diode 28 are mounted on the back surface of the [first] second control board 136 so as to be located in a space between the [second] first control board 302 and the [first] second control board 136. The upper surfaces of these devices are in contact with the [second] first control board 302. Accordingly, the heat generated from the devices such as the FET 27 and the diode 28 is transferred to the first casing half 95 via the [second] first control board 302[, and]; therefore, these devices can be effectively prevented from being heated to high temperatures.

Please **amend the paragraph beginning on page 17, line 21**, as follows:

[A] Referring bck to FIG. 1 and the embodiment described initially, a speed sensor 145 for sensing a magnetic body 144 provided on the driven gear 127 [thereby] for detecting the rotational speed of the driven gear 127 is mounted on the back surface, opposite to the aluminum board 135, of the first casing half 95.

IN THE DRAWINGS:

Please **amend FIG. 11** as indicated in red in the attached copy.

IN THE CLAIMS:

Please **amend claims 1, 2, 4, 5, and 8-16** as follows:

1. (Twice amended) A motor-assisted drive unit for a vehicle, comprising:

a motor having a shaft for providing power to a drive wheel of the vehicle; and

a first control board on which control devices of said motor are mounted, the first control board being arranged substantially perpendicularly to the shaft of said motor, at least part of the first control board extending to a position overlapped with said motor, said first control board having a first region overlapped with said motor, and a second region not overlapped with said motor.

2. (Twice amended) The motor-assisted drive unit of claim **1**, [wherein one of the control devices is a processing unit, the processing unit being mounted on a first region of the] further comprising a second control board having a first region overlapped with said motor [so as to project into a gap between the], a second region not overlapped not overlapped with said motor, and a processing unit mounted on a first region of the second control board [and the motor], said processing unit being one of the control devices.

4. (Amended) The motor-assisted drive unit of claim **3**, wherein the second control board is elastically supported in the casing.

5. (Amended) The motor-assisted drive unit of claim **3**, further comprising:

a thermally conductive board provided on a casing side of the first control board; and

a semiconductor device mounted on said thermally conductive board,

wherein the control devices of said motor are mounted on two surfaces of the control board[; and

a semiconductor device and a thermally conductive board are provided on a surface on a casing side of the control board].

8. (Twice amended) A motor-assisted drive unit for a motor-assisted vehicle, comprising:

a motor for providing power to a drive wheel of the vehicle;

a first control board having at least one control device mounted thereon; and

a second control board having at least one control device mounted thereon, wherein the first and second control boards extend in a direction substantially perpendicular to a motor shaft of the motor, [and the] said second control board [is overlapped] overlapping with at least a part of the first control board, said first control board having a first region overlapped with said motor, and a second region not overlapped with said motor.

10. (Amended) The motor-assisted drive unit of claim **8**, wherein the at least one control device mounted on the [first] second control board includes at least one of a control processor, a capacitor, and a relay.

11. (Amended) The motor-assisted drive unit of claim **10**, wherein the at least one control device mounted on the [second] first control board includes transistor.

12. (Amended) The motor-assisted drive unit of claim **10**, wherein the [first] second control board is a printed wiring board, and the [second] first control board is a metal board.

13. (Amended) The motor-assisted drive unit of claim **12**, wherein the **[**second**]** first control board includes aluminum.

14. (Amended) The motor-assisted drive unit of claim **8**, further comprising a casing, the motor and the first and the second control boards being disposed in the casing, the **[**second**]** first control board being attached to an inner wall surface of the casing, and the [first] second control board being disposed over the **[**second**]** first control board, with a gap disposed between the first control board and the second control board.

15. (Twice amended) The motor-assisted drive unit of claim **4**, wherein the second control board is elastically supported by an annular rubber member disposed around a casing boss portion of the motor shaft.

16. (Amended) The motor-assisted drive unit of claim **15**, wherein the rubber member is compressed between the second control board and a motor supporting portion of the casing.

CLAIMS 18 AND 19 ARE ADDED.